

**CLAIMS**

**What is claimed is :**

- 5     1.     A process for making a synthetic melt spun polyamide filament comprising the steps of:
  - supplying polyamide polymer to a solid phase polycondensation apparatus;
  - supplying a purge gas to the solid phase polycondensation apparatus at a flow rate in the range of about 2 to about 3 kg/hour per kg of polymer per hour;
  - treating the polyamide polymer in the solid phase polycondensation apparatus with the purge gas at a solid phase polycondensation system pressure of about 110 to about 120 kPascal;
  - 15     conveying the treated polyamide polymer to a melt extrusion apparatus;
  - melting the polyamide polymer in the melt extrusion apparatus;
  - extruding the melted polyamide polymer through a spinneret plate;
  - and
  - 20     forming at least one continuous filament of polyamide polymer.
2.     The process of claim 1, further including quenching and cooling the filament.
- 25     3.     The process of claim 2, further including post-treating the filament and winding up the filament.
- 30     4.     The process of claim 3, further including wiping the spinneret plate on the capillary exit side, in cycles, wherein each wiping cycle is separated by about 8 to about 12 hours.
- 35     5.     The process of Claim 1 wherein the purge gas is comprised of nitrogen gas supplied at a flow rate in the range of about 2 to about 3 kg/hour per kg of polymer per hour.

6. A delustered synthetic melt spun polyamide filament having a YARN QUALITY greater than about 32.8, wherein YARN QUALITY is defined according to,
  - 5 YARN QUALITY = [tenacity (grams/denier)] x (% elongation)<sup>1/2</sup> ; said yarn prepared by a process comprising the steps of:
    - providing a synthetic polyamide polymer to a solid phase polycondensation apparatus,
    - treating the synthetic polyamide polymer in the solid phase
    - 10 polycondensation apparatus at a system pressure in the range of about 110 to about 120 kPascal;
    - conveying the treated polyamide polymer to a melt extrusion apparatus;
    - melting the polyamide polymer in the melt extrusion apparatus;
    - 15 extruding the melted polyamide polymer through a spinneret plate;
    - and
    - forming at least one continuous filament of polyamide polymer.